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EXAMINER

HARVEY, DAVID E

ART UNIT PAPER NUMBER

2614

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/029,849

Applicant(s)

MICHEL, XAVIER

Examiner

DAVID E HARVEY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/15/2002.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 10, and 11 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Westerman [US Patent #6,141,056].

As is shown in figure 1, Westerman disclosed an interlaced to progressive scanning system which comprised:

- a) Inter-field interpolating means (12);
- b) Intra-field interpolating means (10);
- c) Determining means (14); and
- d) Selecting means (i.e. the "illustrated" switch that is controlled by the determining means that selects between the Inter-field and intra-field interpolating means).

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3. Claims 1, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by the 1990 IEEE article "MOTION ADAPTIVE PRO-SCAN CONVERTER WITH TWO DIMENSIONAL CONTOUR ENHANCEMENT" by Markhauser et al.

As is shown in figure 2, Markhauser et al. disclosed an interlaced to progressive scanning system which comprised:

- a) Inter-field interpolating means;
- b) Intra-field interpolating means;
- c) Determining means; and
- d) Selecting means.

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the 1990 IEEE article "MOTION ADAPTIVE PRO-SCAN CONVERTER WITH TWO DIMENSIONAL CONTOUR ENHANCEMENT" by Markhauser et al, as set forth for claim 1 above, in view of Faroudja [US #5,428,398].

I. As is shown in figure 2, Markhauser et al. disclosed an interlaced to progressive scanning system which comprised:

- a) Inter-field interpolating means;
- b) Intra-field interpolating means;
- c) Edge/contour enhancing means located at the output of each of the interpolators;
- d) Determining means; and
- e) Selecting means.

II. Claim 2 differs from the showing of Markhauser et al. only in that claim 2 indicates that the edge/contour enhancement occurs before the scan conversion (i.e. interpolation) rather than after scan conversion as is illustrated in Markhauser et al.

III. Faroudja explicitly taught that, in such interlace to progressive scanning systems (note figure 8), the order of the edge/contour enhancement means and the interpolating means was a choice of design [lines 10-15 in column 6].

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Thus, as taught by Faroudja explicitly, locating the edge/contour enhancement means in front of the interpolating means in the system disclosed by Markhauser et al. represents an obvious choice design that would have simplified the systems implementation by reducing the systems processing element count (i.e. in the modified system only one contour correction means would be needed).

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6. Claims 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1990 IEEE article "MOTION ADAPTIVE PRO-SCAN CONVERTER WITH TWO DIMENSIONAL CONTOUR ENHANCEMENT" by Markhauser et al in view of Faroudja [US #5,428,398] for the same reasons that were set forth for claim 2 above. The following is noted:

a) With respect to claim 3: As indicated in figure 4 of Markhauser et al, two dimensional edge/contour enhancement was to be performed by the enhancement means; i.e. wherein such two dimensional enhancement, by definition, includes both one-dimensional horizontal and one dimensional vertical filtering.

7. Claims 4-9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1990 IEEE article "MOTION ADAPTIVE PRO-SCAN CONVERTER WITH TWO DIMENSIONAL CONTOUR ENHANCEMENT" by Markhauser et al for the same reasons that for claim 1 above. The following is noted:

a) With respect to claim 5: The examiner takes Official Notice that it was notoriously well known in the art for inter-field interpolators to have operated by combining pixels of the odd and even fields directing. Such a process was known to have provided the greatest vertical resolution for completely still images. It would have been obvious to one of ordinary skill in the art to have further modified the modified system of Markhauser et al with such



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well known inter-field interpolation means to provide greatest vertical resolution for completely still images.

b) With respect to claims 4, 6, 7, 8 and 9: The examiner takes Official Notice that it was notoriously well known in the art for intra-field interpolators to have been adaptive (i.e. as recited) based on detected correlation/differences of pixel values in the vertical, horizontal, and diagonal spatial directions thereby optimizing the interpolations process based on local transitions/edges/energies. It would have been obvious to one of ordinary skill in the art to have further modified the modified system of Markhauser et al with such well known adaptive intra-field interpolation means to provided optimized special interpolation (i.e. a classic tradeoff between complexity and accuracy).

C) With respect to claims 12: The examiner takes Official Notice that it was notoriously well known in the art to have replaced hardware implementations of signal processing circuitry with a "software" implementation for reasons of increased flexibility (i.e. up-gradable). It would have

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been obvious to have implemented the system disclosed by Markhauser et al in software for such well known reasons.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westerman [US Patent #6,141,056] for the same reasons that for claim 1 above. The following is noted:

With respect to claims 12: The examiner takes Official Notice that it was notoriously well known in the art to have replaced hardware implementations of signal processing circuitry with a "software" implementation for reasons of increased flexibility (i.e. up-gradable). It would have been obvious to have implemented the system disclosed by Westerman in software for such well known reasons.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E HARVEY whose telephone number is (703) 305-4365. The examiner can normally be reached on M-F from 6AM to 3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached on (703) 305-4795. The fax phone number for the

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organization where this application or proceeding is assigned is  
703-872-9306.

Information regarding the status of an application may be  
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access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

  
DAVID E HARVEY  
Primary Examiner  
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